



## King's Research Portal

DOI:

[10.1093/jac/dkx359](https://doi.org/10.1093/jac/dkx359)

*Document Version*

Peer reviewed version

[Link to publication record in King's Research Portal](#)

*Citation for published version (APA):*

Mcdonnell, L., Armstrong, D., Ashworth, M., Dregan, A., Malik, U., & White, P. (2017). National disparities in the relationship between antimicrobial resistance and antimicrobial consumption in Europe: an observational study in 29 countries—authors' response. *Journal of Antimicrobial Chemotherapy*, 72(12), 3500-3500.  
<https://doi.org/10.1093/jac/dkx359>

### Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### Take down policy

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

Professor JP Donnelly  
Editor-in-Chief  
Journal of Antimicrobial Chemotherapy

Dear Professor Donnelly

We are grateful for Professor Pulcini's interest in our paper and for her comments highlighting the limitations of the use of Defined Daily Dosage (DDD) as a standardised measure of volume of antibiotic consumption. The data on which our analysis was based were derived from the European Centre of Disease Control which currently uses DDD to record antibiotic consumption. The data do not include information on duration of consumption. We acknowledge that DDDs have some limitations, particularly in relation to antibiotic consumption in children. We note the evidence from McNeilly et al that a temporal rise in antibiotic volumes in Scotland was explained mainly by rising DDDs, and the report by Forst et al that DDDs overestimated prescribing volumes in German hospitals.(1,2)

Professor Pulcini made the important observation that duration of treatment (DoT) may be independently associated with the development of antimicrobial resistance at a national level. It is likely that there are national differences in the conventions governing duration of antibiotic prescribing for different types of infection resulting in variation at national level in DoT. At present, we have no European data to monitor the role of DoT. These differences may explain some of the disparities we observed in our paper. In addition, consumption of antibiotics may be less predictable, and DDDs may be less reliable, as prescribers of antibiotics become less doctrinaire about the need to complete a course.(3)

Future analysis of the association at national level between community antimicrobial consumption and resistance in invasive specimens should consider the role of duration of consumption.

Yours sincerely

Dr Lucy McDonnell  
Dr Mark Ashworth  
Professor David Armstrong  
Dr Alex Dregan  
Dr Umer Malik  
Dr Patrick White

The authors declare no competing interests.

#### References

1. Först G, de With K, Weber N *et al*. Validation of adapted daily dose definitions for hospital antibacterial drug use evaluation: a multicentre study. *J Antimicrob Chemother* 2017; doi:10.1093/jac/dkx244.6
2. Neilly MDJ, Guthrie B, Hernandez Santiago V *et al*. Has primary care antimicrobial use really been increasing? Comparison of changes in different prescribing measures for a complete geographic population 1995–2014. *J Antimicrob Chemother* 2017; doi:10.1093/jac/dkx220

3. Llewelyn M, Fitzpatrick JM, Darwin E, Tonkin-Crine S, Gorton C, Paul J, Peto TEA, Yardley L, Hopkins S, Walker AS. The antibiotic course has had its day. *Br Med J* 2017; 358:j3418  
[doi.10.1136/bmj.j3418](https://doi.org/10.1136/bmj.j3418)